221688

28,575/57

COMMONWEALTH OF AUSTRALIA.

PATENT SPECIFICATION

Complete Specification Lodged ..... 11th June, 1957.

Application Lodged(No.28,575/57) ..... 11th June, 1957.

Applicant ..... Kwikform Limited.

Actual Inventor ..... Albert Henry Hawes.

Convention Application.
(Great Britain, 16th November, 1956).

LAPSED BEFORE ACCEPTANCE.

Complete Specification Published ..... 12th December, 1957.

Classification 81.7; 81.2; 81.4.

Drawings (2 sheets) attached.

COMPLETE SPECIFICATION.

"IMPROVEMENTS IN OR RELATING TO EXTENSIBLE BEAMS FOR SUPPORTING SHUTTERING."

The following statement is a full description of this invention, including the best method of performing it known to us:-

This invention relates to extensible beams for use in supporting shuttering, which beams are of the kind comprising two members telescopically slidable in a direction longitudinally of the beam, one within the other, with the inner member provided with a head portion, the head portion of the inner member where it extends beyond the outer member being adapted together with the top portion of the outer member to support the shuttering, and releasable clamping means being provided for forcing the head portion of the inner member into pressure engagement with the inside of the top portion of the outer member to secure the two members releasably together in their desired relatively adjusted position.

Such beams are customarily employed in the supporting of shuttering for use in the construction of concrete and like ceiling, floors and similar parts of building structures, the arrangement being such that the beam at its two ends and, if desired, at one or more position

intermediate its ends, is supported from beneath, for example by means of scaffold elements such as a scaffolding structure provided for this purpose, or more customarily in the case of the two ends of the beam, from a pair of walls of the building structure between which the beam extends. The extensible nature of the beam enables the same beam readily to be used with different wall spacings as well as with differently spaced supporting scaffold elements.

The present invention has for its object the provision of a new or improved construction of extensible beam of the foregoing kind in which the two members of the beam are adapted to be secured together in the particular relatively extended position required in a specially rigid manner.

An extensible beam according to the present invention is characterised by the feature that the outer of the two telescopically slidable members is of inverted channel configuration in cross section and is provided along the lower edge of each of its two channel sides with a flange projecting transversely of the length of the beam, the clamping means being provided on the inner member and embodying a pair of abutments spaced apart laterally of the beam and adapted each for releasable pressure engagement with the upper side of one of said two flanges, the arrangement being such that on tightening the clamping means, the two abutments are brought into pressure engagement with the upper sides of said flanges and the inner section of the beam is displaced upwardly in relation to the outer section to bring its head portion into pressure engagement with the underside of the base part of the inverted channel shaped outer member to secure the two members rigidly together in their desired relatively adjusted position.

The invention in a more specific form is herein defined as an extensible beam comprising two members telescopically slidable longitudinally of the beam, one within the other, and being characterised in that the outer of the two telescopically slidable members is of inverted channel configuration in cross section and is provided along each of the lower edges of its dependent channel sides with a flange projecting transversely of the length of the beam, the inner member being provided at its upper side with a head portion adapted for pressure engagement with the underside of the base part of the channel shaped outer member, said inner member of the beam being provided with clamping means comprising a thrust element embodying a pair of abutments spaced apart laterally of the beam and adapted each for releasable thrust engagement with the upper side of one of said two flanges, and an extensible clamping member in thrust transmitting connection with the thrust element adapted, when extended, to exert a thrust acting between the outer member flanges

engaged by the abutment element, and the head portion of the inner member of the beam to force this into pressure engagement with the underside of the said base portion of the outer member to thereby secure the two members in their desired relatively adjusted positions, and means operable by the user for extending or contracting the said extensible clamping member to secure or release said two beam members respectively.

Preferably the two flanges provided on the lower edge of the two dependent sides of the outer member would extend towards one another so that the said two abutments would be disposed within the hollow interior of the outer member.

Preferably the said flanges would extend upwardly to the horizontal in a direction towards their free edges so as to provide between the upper side of each flange and the adjacent inner face of the associated dependent side of the outer member a substantially 'V' shaped groove, each abutment being so shaped as to have pressure engagement with the upper side of each flange at a position immediately adjacent the junction of the flange with the associated channel side, the arrangement being such that the thrust thereby transmitted to the flange is transmitted directly to the adjacent channel side without fear of distorting the flange or the adjacent channel side when the clamping means is fully tightened.

For example, each abutment may take the form of a dependent rib of 'V' configuration in cross section, with the apex angle somewhat less than the apex angle of the 'V' section groove referred to, the arrangement being such that clearance is provided between the upper side of the flange and the rib except at the position immediately adjacent the junction of the flange with the associated channel side.

The clamping means would preferably be constructed as a member mounted for rotational movement in relation to the thrust element, but located against axial movement in either direction relative to the thrust element, the said rotatable member having a thrust transmitting screw threaded connection to the inner member of the beam the arrangement being such that when the rotatable member of the clamping means is turned in one or the other direction, the abutment element is displaced towards the head portion of the inner member so as effectively to release its abutments from pressure engagement with the said flanges and permit of free adjustment of the length of the beam or alternatively to bring its abutments into pressure engagement with the said flanges and thereby force the head portion of the inner member into pressure engagement with the part above referred to of the outer member.

The beam may embody merely a single inner member and a single outer member in which event it is sufficient to provide only one clamping means which would most conveniently be disposed adjacent one

end of the inner member, but where the beam is provided with two outer members, each telescopically slidable over one of the two end portions of the inner member, a pair of clamping means would be provided disposed one adjacent each end of the inner member and to enable a beam embodying a single outer member to be supplied with the minimum of expense and subsequently adapted, if required by the user, for carrying two outer members, the inner member may be provided at each end of the beam with a dependent internally threaded socket adapted to receive detachably an externally threaded portion provided on the upper end of the rotatable clamping member of each clamping means, the arrangement permitting of a second rotatable clamping member with its associated thrust element being readily supplied when a longer overall span is desired.

The inner member would preferably embody upper and lower chords, of which the upper chord is conveniently constituted by a 'T' sectioned element, the horizontal flange of which forms the head portion of the inner member, the bottom chord being constituted by a metal bar connected to the upper chord at intervals by diagonal or lattice-like reinforcements so as to provide an inner member of essentially lattice girder construction.

The inverted channel section outer member would preferably be formed as a one piece metal sheet or plate section, with the base, sides and flanges thereof all continuous and integrally formed with one another, but it is within the scope of the invention that the outer member should be of built up construction with the sides formed separately from the said base and, if desired, the flanges may then be formed as metal beads or the equivalent, welded or otherwise secured to the lower edges of the said sides and in such an arrangement the sides instead of being continuous may also be of lattice or other built up construction with the lower edges of the sides constituted by bottom chord members, one longitudinal edge of each of which members forms the said abutment engaging flanges.

Although it is preferred that each outer member should be of inverted rectangular channel form in cross section, other channel sections are embraced within the scope of this patent application.

In practice, to enable an extensible beam embodying the present invention to be utilised satisfactorily under most of the conditions likely to be encountered, the user would preferably be supplied with two outer members and two inner members, with the two inner members of different length; the arrangement permitting of a wide variation in the overall length of the beam to be obtained by using, in the case of the smaller lengths, the shorter inner member with one or both outer members, and for the longer lengths by using the longer inner member with one or both of the same two outer members, the arrangement in either case being such that only three

members at the most would be employed in forming the beam.

However, if desired, two inner members may be coupled together in end to end relationship by means of a coupling member of cross section identical with that of the outer members referred to so as to be secured at each end to the adjacent end on one of the two inner members in the manner above described, the coupling member being adapted to be supported from beneath by means of a suitable scaffolding element or the equivalent external supporting element.

The invention is illustrated in the accompanying drawings wherein:-

Figure 1 is a side elevation of one form of extensible beam embodying the present invention.

Figure 2 is a sectional view on an enlarged scale on the line 2-2 of Figure 1.

Figure 3 is a sectional plan view on the line 3-3 of Figure 2.

Figure 4 is a side elevation to an enlarged scale depicting part of the inner member.

Figure 5 is a side elevation similar to Figure 1, but illustrating how an increase in the maximum span of the beam can be obtained.

Figure 6 is a side elevation partly in section, depicting the provision of a coupling member for the purpose of increasing still further the overall span of the beam.

Figure 7 is a side elevation of an auxiliary attachment for use in supporting an end of the beam as already described.

Figure 8 is an end view of the attachment depicted in figure 7.

Figure 9 is a view similar to Figure 7 but showing an alternative construction.

Referring firstly to Figures 1 to 4 of the drawings, the extensible beam there illustrated comprises an outer member 10 of inverted rectangular channel configuration formed as a one piece sheet metal section and embodying a base part 11 which constitutes the upper side of the outer member and a pair of vertically dependent sides 12 to this member, the horizontal lower edges of each of which sides 12 are integrally formed with a flange 13, each of which flanges extend for the full length of the outer member and project transversely of the length of the beam, with the two flanges extending towards one another and being inclined upwardly to the horizontal in a direction towards their free edge, so that the upper side 14 of each flange forms with the adjacent inner face of the associated dependent side 12, a substantially 'V' section groove, the angle of which in the embodiment illustrated is approximately 40^{o}: that is to say, the angle between the flange upper side 14, and the adjacent inner face of the dependent side 12. This angle can conveniently vary

within the range of 20° to 50°.

The beam depicted in Figure 2 is provided with a single inner member 15, which is telescopically slidable within the outer member and has a length somewhat greater than that of the outer member, and this inner member 15 is of built up construction comprising an upper horizontal chord 16 which is constructed as a 'T' sectioned element, the flange 17 of which constitutes the head portion aforesaid of the inner member, and the upper side of this flange, as clearly shown in Figure 2, is adapted for pressure engagement with the inside of the base portion 11 of the part of the outer member 10 within which the inner member extends.

The inner member 15 embodies further a lower chord 18 which is conveniently formed as a metal bar of square configuration in cross section, the bar having its two ends 19 bent upwardly with their extremities secured by welding to the lower edge of the web 20a; of the 'T' sectioned element, in each case at the extremity of such element.

The lower chord 18, except at its two extremities, extends in spaced parallel relationship to the upper chord 16 to which adjacent its said two end portions, 19 it is joined by vertical bracing 20, the lower chord intermediate such positions being joined to the upper chord by diagonal or zig-zag bracing bars 21 so that the inner member is basically of lattice girder section. Secured as by welding to the underside of the horizontal extremity 22 of the lower chord member 18 adjacent its connection to the upper chord is a dependent spigot 23 of short length wh extends within the upper portion of a dependent socket tube 24, the upper edge of which is welded to the said chord extremity 22 and the lower part of this socket tube 24 is internally threaded and is adapted to receive detachably, the screw threaded upper end of a rotatable clamping member 25, which clamping member 25 with its associated socket 24 constitutes part of the clamping means above referred to.

This clamping member extends freely intermediate its two ends through a hole formed centrally in a thrust element 26 also forming part of the clamping means, the clamping member 25 being provided with upper and lower thrust collars 27, 28, which engage respectively with the upper and lower sides of the thrust element 26, the arrangement being such that when the clamping member 25 is turned by means of the turning eye 29 provided at its lower extremity so as to screw it into or out of the socket 26, the thrust element is positively displaced in an upward or downward direction respectively.

As shown in Figure 3 the thrust element 26 is of generally elongated rectangular form in plan, with its two shorter sides 30, engaging slidably with the inner face of the adjacent dependent side 12 of the outer member, whereby the thrust element is precluded from rotation

when the clamping member 25 is turned, although the thrust element is free to move upwardly or downwardly in relation to the outer member 10 of the beam.

Adjacent each of its two shorter sides 30 the thrust element 26 is provided with a dependent abutment 31 so that two such abutments are provided spaced apart laterally of the beam, each of these abutments being constructed as ribs of 'V' configuration in cross section, each rib being displaceable longitudinally of the beam in one of the 'V' shaped grooves constituted by each of the up-turned flanges 13 aforementioned of the outer member.

The apex angle of each 'V' sectioned abutment rib 31 is made slightly, namely about 5^{o}, less than the corresponding angle of the groove, that is to say, in the preferred arrangement illustrated this apex angle is conveniently 35^{o} and may be within the overall range of 15^{o} to 45^{o} corresponding to the angle range of 20^{o} to 50^{o} aforementioned for each 'V' shaped groove.

The outer face 32 of each abutment rib which is immediately adjacent the dependent side 12 is tapered in an upward direction away from such side by an angle of the order of 1^{o} so as to provide there slight clearance between the rib and such side, except at the lower end of the abutment rib and it follows from the foregoing that there is appreciable clearance where indicated at 33 between the inner side of each abutment rib and the adjacent upper side 14 of the corresponding flange 13.

Thus, engagement between each abutment rib and the associated flange 13 is confined to the lower part 34 of the flange adjacent to where it joins the associated side 12 and this part of the flange is formed on its upper side to part circular configuration in cross section; the lower extremity 35 of each rib is also of part circular form in cross section at this position with the radius of curvature of the rib slightly less than that of the upper side of the part 34 of the flange.

The arrangement is such that when the clamping member 25 is turned to displace the thrust element 26 in a downward direction relative to the inner member 15, only the lower edge 35 of each abutment rib 31 is brought into pressure engagement with the flange 13, namely in pressure engagement with the part 34 of the flange immediately adjacent its junction with the associated outer member side 12 and the downwardly directed thrust exerted by each abutment rib 31 on the flange part 34 is applied to the flange at a position so close to the adjacent side 12 that the flange and the adjacent side 12 is subjected to the minimum of bending moment and each side 12 of the outer member is, under these conditions, with the clamping member 25 tightened, substantially in pure tension and there is the minimum of distortion of the outer member under these conditions.

As the clamping member 25 is tightened to bring the abutment ribs 31 into pressure engagement with the flanges 13, the clamping member 25 will be subjected to a compressive thrust forcing the flange 17 constituting the head portion of the inner member, into tight pressure engagement with the underside of the base part 11 at a position which is longitudinally adjacent the clamping means so as thereby to secure the two members of the beam rigidly in their adjusted position.

The non-adjacent ends of the outer and inner members 10, 15 of the beam are provided respectively with a lip bracket 36, 37 of angle section, the horizontal flange 38 of which brackets forming in the known manner a lip for resting on the upper surface of an adjacent wall 39 and with the vertical flange 40 dependent and secured to the adjacent beam member.

Undesired separation of the two members of the beam is ensured by making the dependent flange 40 of the outer member bracket 36 of length sufficient to fully close the adjacent end of the outer member and by providing the opposite end of the outer member with a 'U' shaped retaining strap 41, the limbs of which are secured to the adjacent outer member flanges 13 and the connecting part 42 of which U-shaped strap 41 is adapted when the beam is fully extended as shown in dotted outline in Figure 4 to engage with the head of a removable retaining screw 43 which screw is detachably secured to the lower chord element 18 of the inner member of the beam as clearly shown in Figure 4; the arrangement being such that complete withdrawal of the inner member from the outer member can be effected only by removing the retaining screw 43 as will be apparent from a consideration of Figure 1 of the drawing.

The retaining strap 41 insofar as it embraces the lower edge of the inner member also serves to prevent the outer member 10 being displaced by too great a distance upwardly in relation to the inner member 15 when the beam is out of use. Furthermore, the strap 41 serves to stiffen the two sides 12 of the outer member so as to minimise the risk of these being bent towards one another during the handling or transportation of the beam.

The present invention provides an extensible beam in which the inner member is secured in pressure engagement with the outer member in a particuoarly efficient manner in so far as the outer member, as already explained, is subjected by the clamping means provided, to the minimum of bending moment leading to distortion, and the inner member is subjected to a purely vertical compressive loading and under these conditions it is considered that a particularly high pressure can readily be employed for securing the two members together so that the construction is considered to be an extremely efficient one.

From the foregoing description it will be understood that adjustment of the overall length of the beam can readily be effected by merely turning the rotatable clamping member 25 of the clamping means so as to displace this member 25 upwardly in relation to its associated socket 24 and thereby positively displace the thrust element 26 and head portion 17 of the inner member relatively towards one another so as positively to release the pressure engagement between the thrust element 26 and the two flanges 13 on the one hand, and the pressure engagement between the head portion 17 and the base part 11 of the outer member on the other hand, and thereby quickly and readily free the inner member in relation to the outer member; thus permitting of the desired adjustment in the length of the beam being effected by sliding the inner and outer members relatively longitudinally of the beam, whereupon the clamping member 25 would then be turned in the opposite direction to secure the two members in their relatively adjusted position.

Where only a relatively small maximum span is required for the beam this would, as shown in Figure 1, embody merely a single outer member and a single inner member, one end of which would be telescopically slidable within the outer member and under these conditions only one rotatable clamping member 25 with its associated thrust element 26 would be utilised at one end of the inner member, leaving the socket 24 at the opposite end of the inner member unused, as shown in Figure 1 of the drawings.

However, as shown in Figure 5, the beam may be provided with two outer members disposed one at each end of the single inner member and clamped to each end of the inner member in the manner described by one of the two corresponding clamping means, each secured to the inner member by one of the two sockets 24 in the manner described.

With the arrangement shown in Figure 5 the inner member depicted is of a length greater than that depicted in Figure 1 and in one specific construction by providing two outer members of the same identical length of the order of 5 feet, and two inner members of different lengths one of the order of 6 feet and the other 9 feet, it is possible to obtain a very wide overall variation in the span of the beam.

For example, by employing one outer member with the shorter length inner member an overall adjustment in span between approximately 6 and 9 feet may be effected while by providing this shorter inner member with a second outer member of the length referred to, the variation in span may then be increased from a minimum figure of about 9 feet to a maximum figure of about 13 feet; and a similar variation may be employed by utilising the longer inner member having the length of the order of 9 feet, with one of these outer members; while a still further

variation within the range of approximately 9 to 16 feet is obtainable by the use of this longer inner member with the two outer members.

Where a longer inner member is employed it may be necessary to prop the inner member centrally of the span of the beam for which purpose, as shown in Figure 5, the lower chord element of the inner member is provided centrally of its length with a dependent socket 44 for receiving the upper end of a supporting strut.

Where a still further increase in the overall span of the beam is desired two longer inner members each as shown in Figure 5, are coupled together in end to end aligned relationship by means of a coupling member 45, as shown in Figure 6, such coupling member being formed of a cross section identical with that of the outer members 10, but of a shorter length and being adapted at each of its ends to be clamped precisely in the manner already described to the adjacent end of each of the two aligned inner members 15.

This coupling member 45 has secured medially of its length to the underside of its two flanges 13 aforementioned, a plate 46 adapted to be engaged by the head of a suitable prop so as effectively to support this longer beam centrally of its overall length.

The thickness of the base part 11 of each outer member is made small in the known manner, being of the order of 5/16" so that the upper side of the head portion 17 of the inner member, where this projects beyond the outer member, is substantially flush with the upper side of the base part 11 of the outer member so as to provide in the known manner a substantially flush surface for supporting the shuttering. The construction so far described is intended for use in supporting shuttering of sheet-like form in which the edges of the shuttering, of small vertical thickness, may extend over the horizontal flange 38 of each lip, but where the shuttering is of substantial vertical thickness and it is desired to support its upper surface flush with the upper edge of the wall 39, it is no longer possible to employ a construction as shown in Figure 1 in which the upper side of the beam is substantially flush with the upper edge of the wall 39 and the beam is supported in a lowered position in relation to the upper edge of the wall by providing it at each end with lip end adaptors of double angle configuration as shown at 47 in Figures 7 to 9.

Each such lip adaptor comprises a lower attachment portion 48 of angle form which is secured by screws 49 to the vertical flange 40 of the existing lip bracket 36, 37 on each end of the beam, i.e. on the outer or the inner member as the case may be, with the attachment portion 48 within the angle of the bracket 36 or 37 as the case may be.

In such an arrangement the second angle portion 50 of the lip end adaptor 47 extends above the horizontal flange 38 of the lip bracket 36

or 37 by a distance corresponding to the depth of the vertical flange 51 of this section angle portion, the horizontal flange 52 of which section angle portion now constitutes the lip flange for resting on the upper edge of the wall.

In Figures 7 and 8 is shown a construction in which the depth of this second vertical flange 51 of the adaptor 47 is sufficient to accommodate a built up form of metal shuttering with its underside resting on the upper side of the lip 38 as well as on the beam itself and its upper side flush with the upper edge of the lip 52.

In Figure 9 is depicted a modification of the arrangement shown in Figures 7 and 8, in which the depth of this flange 51 is less, so as to accommodate shuttering of a lesser thickness, namely timber shuttering.

The claims defining the invention are as follows:-

1. An extensible beam of the kind specified characterised in that the outer of the two telescopically slidable members is of inverted channel configuration in cross section and is provided along the lower edge of each of its two channel sides with a flange projecting transversely of the length of the beam, the clamping means being provided on the inner member and embodying a pair of abutments spaced apart laterally of the beam and adapted each for releasable pressure engagement with the upper side of one of said two flanges, the arrangement being such that on tightening the clamping means, the two abutments are brought into pressure engagement with the upper sides of said flanges and the inner section of the beam is displaced upwardly in relation to the outer section to bring its head portion into pressure engagement with the underside of the base part of the inverted channel shaped outer member to secure the two members rigidly together in their desired relatively adjusted position. (Priority dated: 16th November, 1956).

2. An extensible beam comprising two members telescopically slidable longitudinally of the beam, one within the other, and being characterised in that the outer of the two telescopically slidable members is of inverted channel configuration in cross section and is provided along each of the lower edges of its dependent channel sides with a flange projecting transversely of the length of the beam, the inner member being provided at its upper side with a head portion adapted for pressure engagement with the underside of the base part of the channel shaped outer member, said inner member of the beam being provided with clamping means comprising a thrust element embodying a pair of abutments spaced apart laterally of the beam and adapted each for releasible thrust engagement with the upper side of one of said two flanges, and an extensible clamping

member in thrust transmitting connection with the thrust element adapted, when extended, to exert a thrust acting between the outer member flanges engaged by the abutment element, and the head portion of the inner member of the beam to force this into pressure engagement with the underside of the said base portion of the outer member to thereby secure the two members in their desired relatively adjusted positions, and means operable by the user for extending or contracting the said extensible clamping member to secure or release said two beam members respectively. (Priority date: 16th November, 1956).

3. An extensible beam according to Claims 1 or 2 characterised in that the two flanges provided on the lower edge of the two dependent sides of the outer member extend towards one another. (Priority date: 16th November, 1956).

4. An extensible beam according to any of claims 1 to 3 characterised in that the clamping means is constructed as a member mounted for rotational movement in relation to the thrust element, but located against axial movement in either direction relative to the thrust element, the said rotatable member having a thrust transmitting screw threaded connection to the inner member of the beam, the arrangement being such that when the rotatable member of the clamping means is turned in one or the other direction, the abutment element is displaced towards the head portion of the inner member so as effectively to release its abutments from the said flanges and permitting of free adjustment of the length of the beam or alternatively to bring its abutments into pressure engagement with the said flanges and thereby force the head portion of the inner member into pressure engagement with the part above referred to of the outer member. (Priority date: 16th November, 1956).

5. An extensible beam according to any of the preceding claims characterised in that the inner member comprises upper and lower vertically spaced chords, of which the upper chord comprises a "T" sectioned element, the horizontal flange of which forms the head portion of the inner member, the bottom chord being constituted by a metal bar connected to the upper chord at intervals by diagonally extending reinforcements so as to provide an inner member of essentially lattice girder construction. (Priority date: 16th November, 1956).

6. For use in forming an extensible beam according to any of the preceding claims the provision of two outer members and two inner members as aforesaid, each provided with associated clamping means,

characterised in that the two inner members are of different length, the arrangement permitting of a wide variation in the overall length of the beam to be obtained by using, in the case of the smaller lengths, the shorter inner member with one or both outer members, and for the longer lengths by using the longer inner member with one or both of the same two outer members, the arrangement in either case being such that only three beam members aforesaid at the most need be employed in forming the assembled beam. (Priority date: 16th November, 1956).

7. An extensible beam according to any one of claims 1 to 6 characterised in that the two abutments and the two flanges are adapted for pressure engagement with one another at a position adjacent the junction of each flange with its associated side of the outer member, and each abutment is adapted to transmit the pressure to the said flange in a direction away from the said base part of the outer member and substantially aligned with each outer member side, the arrangement being such that each outer member with its associated flange is thereby subjected to the minimum of bending. (Priority date: 11th June, 1957).

8. An extensible beam according to Claims 3 and 7 characterised in that the said flanges extend upwardly to the horizontal in a direction towards their free edge so as to provide between the upper side of each flange and the adjacent inner face of the associated dependent side of the outer member a substantially "V" shaped groove, each abutment being so shaped as to have pressure engagement with the upper side of each flange at a position immediately adjacent the junction of the flange with the associated channel side. (Priority date: 11th June, 1957).

9. An extensible beam according to Claim 6 characterised in that each abutment is in the form of a dependent rib of "V" configuration in cross section, with the apex angle somewhat less than the apex angle of the "V" section groove referred to, the arrangement being such that clearance is provided between the upper side of the flange and the rib except at the position immediately adjacent the junction of the flange with the associated channel side. (Priority date: 11th June, 1957).

10. An extensible beam according to any of Claims 1 to 9 characterised in that it embodies merely a single inner member and a single outer member, with the inner member provided at one end thereof with a single clamping means. (Priority date: 11th June, 1957).

11. An extensible beam according to any of claims 1 to 9 and wherein the beam comprises two outer members, each telescopically slidable over one of the two end portions of the inner member, characterised by the provision of a pair of clamping means disposed one adjacent each end of the inner member. (Priority date: 11th June, 1957).

12. A modification of the arrangement as claimed in claims 10 or 11, each as appendent to claim 4, characterised in that the inner member is provided at each end of the beam with a dependent internal threaded socket, each socket being adapted to receive detachably an externally threaded portion provided on the upper end of the rotatable member of the said clamping means, with at least one clamping means being so connected in situ to one of said two sockets, the arrangement permitting of the inner member being provided with a single outer member at one end thereof or, if desired, with a second outer member at its opposite end by detachably mounting the clamping member of a second clamping means in the appropriate inner member socket. (Priority date: 11th June, 1957).

13. An extensible beam according to any of the preceding claims and provided with a coupling member of cross section identical with that of each outer member so as to be adapted to be secured at each end to one of two horizontally aligned inner members by clamping means as aforesaid on each inner member, each coupling member being provided with means for supporting it from beneath by means of an external supporting element. (11th June, 1957).

14. An extensible beam according to any of the preceding claims, characterised by the provision at each end and thereof of a removable lip adaptor comprising two angle portions each embodying a horizontal and a vertical flange, with the horizontal flange of one portion connected at its outer end to the lower end of the vertical flange of the other portion, and the vertical flange of the first mentioned portion being adapted to be secured releasably to the end of the beam in such a manner as to support the upper surface of the beam spaced vertically below the horizontal flange of the second portion of the lip adaptor with said horizontal flange resting on the upper surface of a wall, the arrangement permitting of the beam supporting shuttering of substantial depth with the under surface of the shuttering resting on the beam and the upper surface of the shuttering flush, or substantially flush, with the upper side of the wall. (Priority date: 11th June, 1957).

15. An extensible beam substantially as hereinbefore described with reference to and as shown in figures 1 to 5 or 6 of the accompanying drawings. (Priority date: 11th June, 1957).

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Serial No.	Application No.	Classification.
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153,149	2525/51	81.2; 81.3; 81.4.

Printed for the Government of the Commonwealth by
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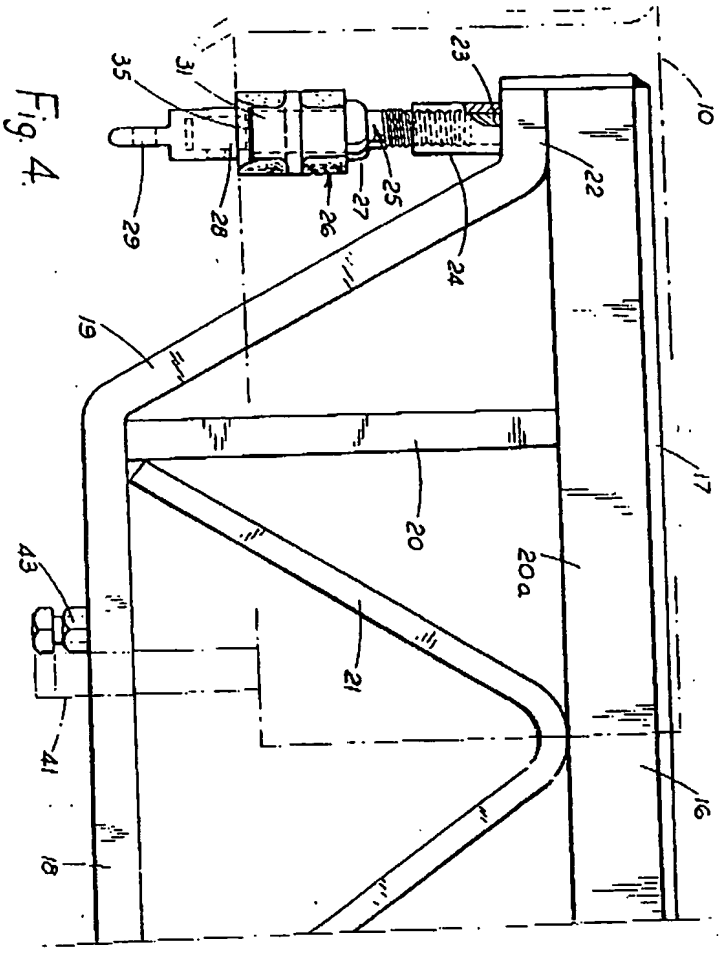


Fig. 4.

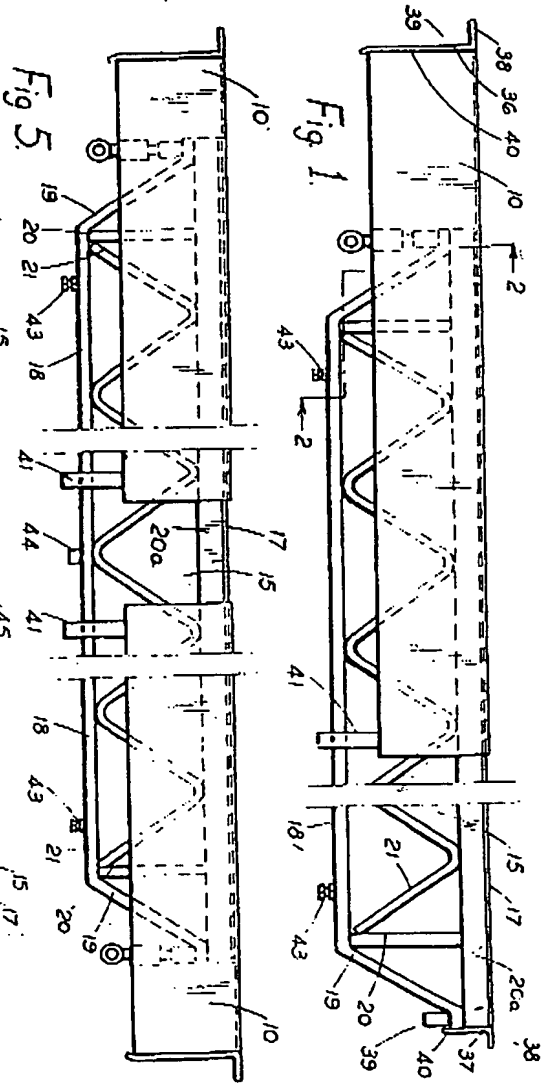


Fig. 1.

Fig. 5.

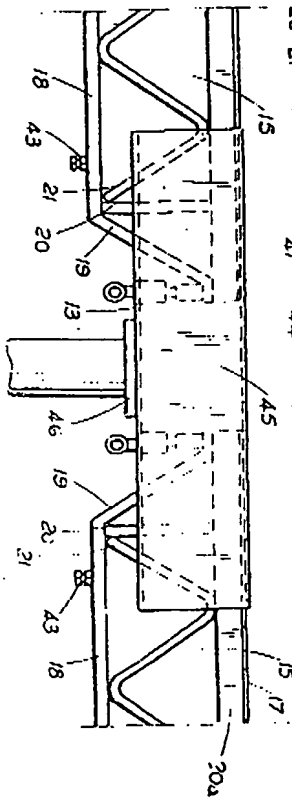
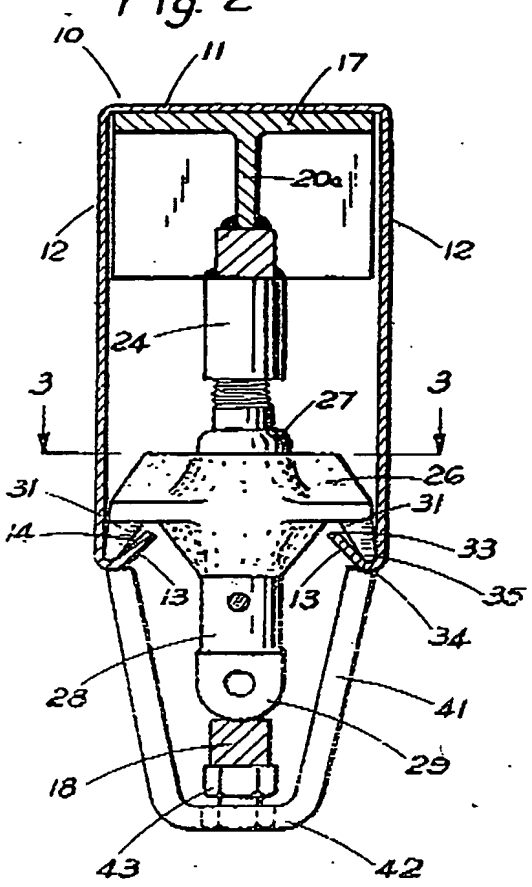


Fig. 6.

Fig. 2



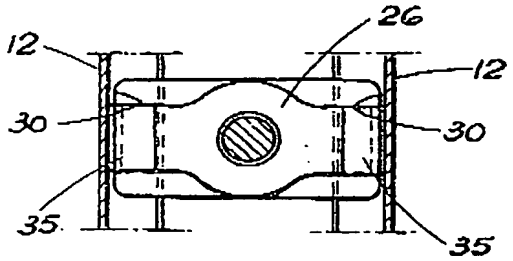


Fig. 3

Fig. 7

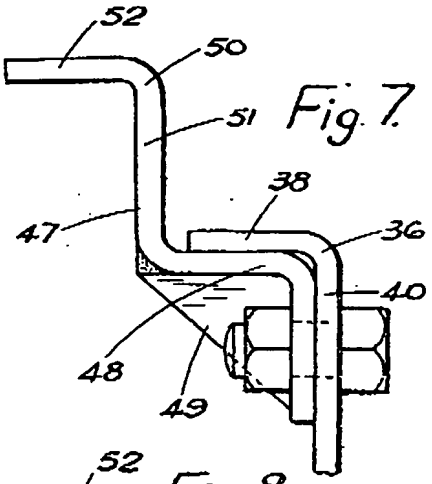
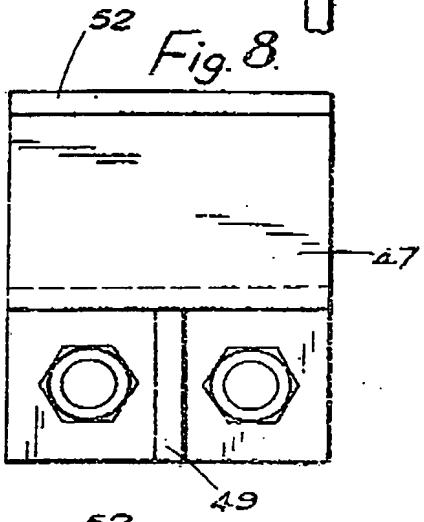


Fig. 8



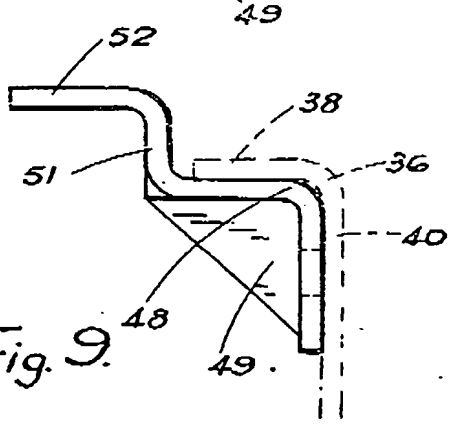


Fig. 9

THE CLAIMS defining the invention are as follows:-

1. A lintel support for supporting adjacent ends of two lintels each having an end portion terminating in an end face at said end and a shaft projecting from said end face, said lintel support comprising: a column; a pair of mounting plates supported on the column, each mounting plate having a mounting face and a mounting aperture provided in the mounting face and extending through the mounting plate whereby the mounting aperture in each mounting plate can receive the shaft of a respective one of the lintels with the mounting face of the mounting plate confronting the end face of the lintel; a securing means arranged to co-operate with each mounting plate and the shaft received in the mounting aperture therein to urge the mounting face of the mounting plate into pressing engagement with the end face of the respective lintel; and two support surfaces one below each mounting plate for at least initially supporting the ends of the lintels prior to said pressing engagement between the mounting faces of the mounting plates and the end faces of the lintels.

2. A lintel support as claimed in claim 1 wherein each securing means is arranged to co-operate with the respective mounting plate by abutting a face thereof opposed to said mounting face.

3. A lintel support as claimed in claim 2 wherein each securing means comprises a nut for threadingly engaging a portion of the shaft extending beyond said aperture.

4. A lintel support as claimed in any one of the preceding claims wherein the two mounting plates comprise the wings of a body of angle cross-section.

5. A lintel support according to claim 4 wherein said support surfaces are defined by a support member mounted onto the underside of said body of angle cross-section.

6. A lintel support substantially as hereindescribed with reference to the accompanying drawings.

DATED this eighth day of November, 1988.

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Applicant

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Patent Attorneys for Applicant

34916/84

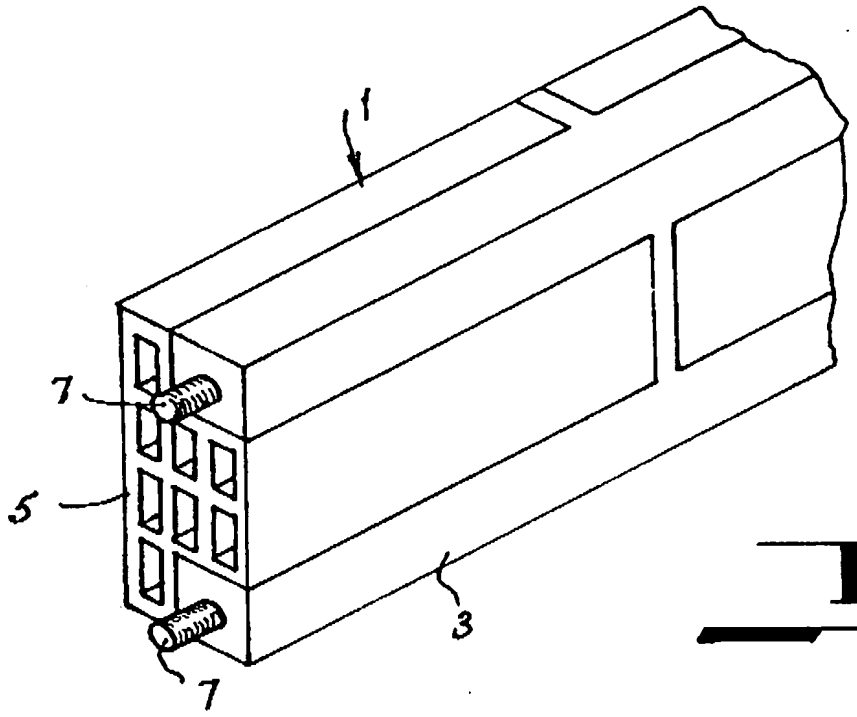

Fig. 1.

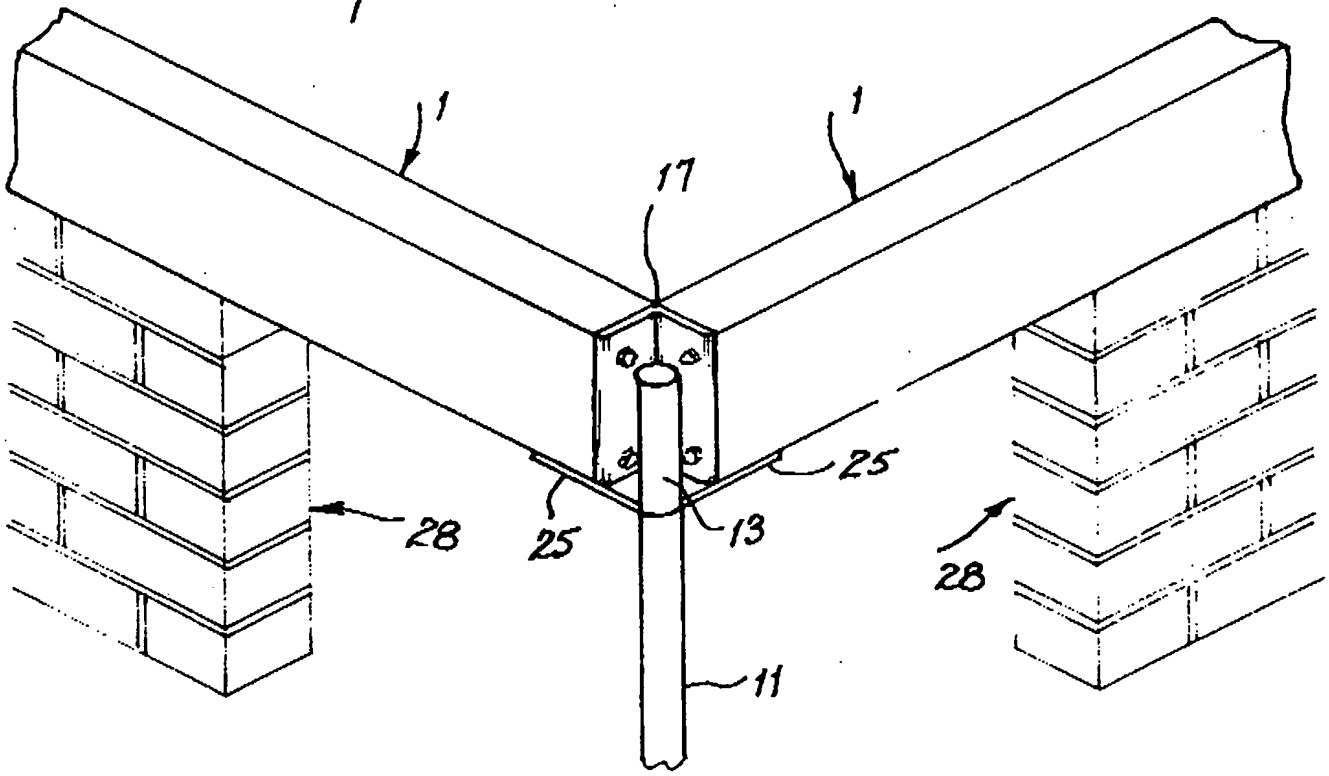

Fig. 2.

34916/84

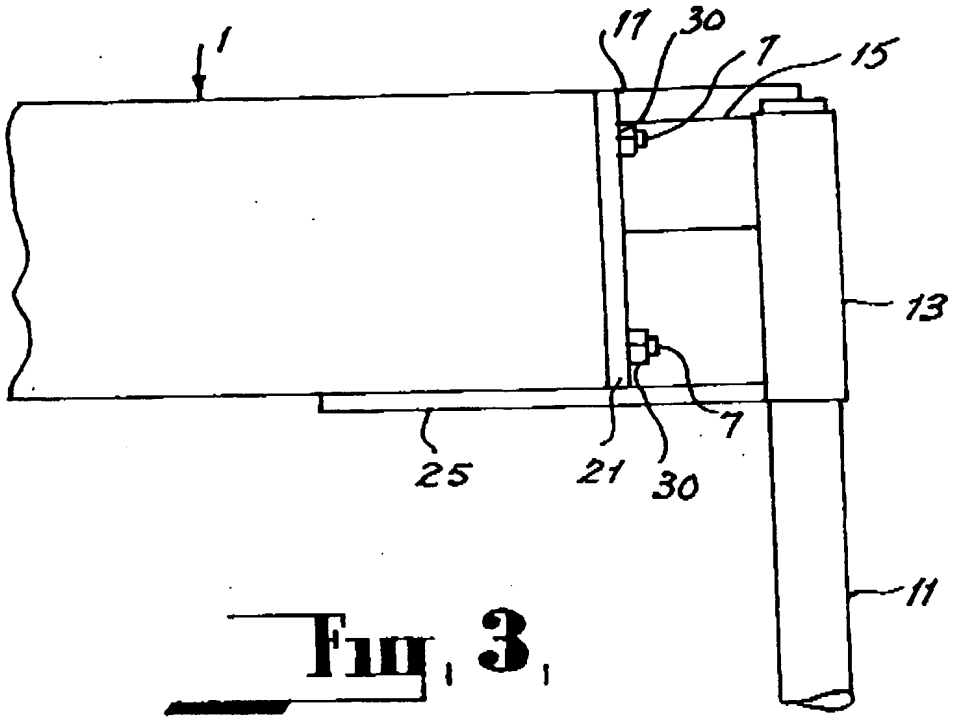

Fig. 3.

34916/84

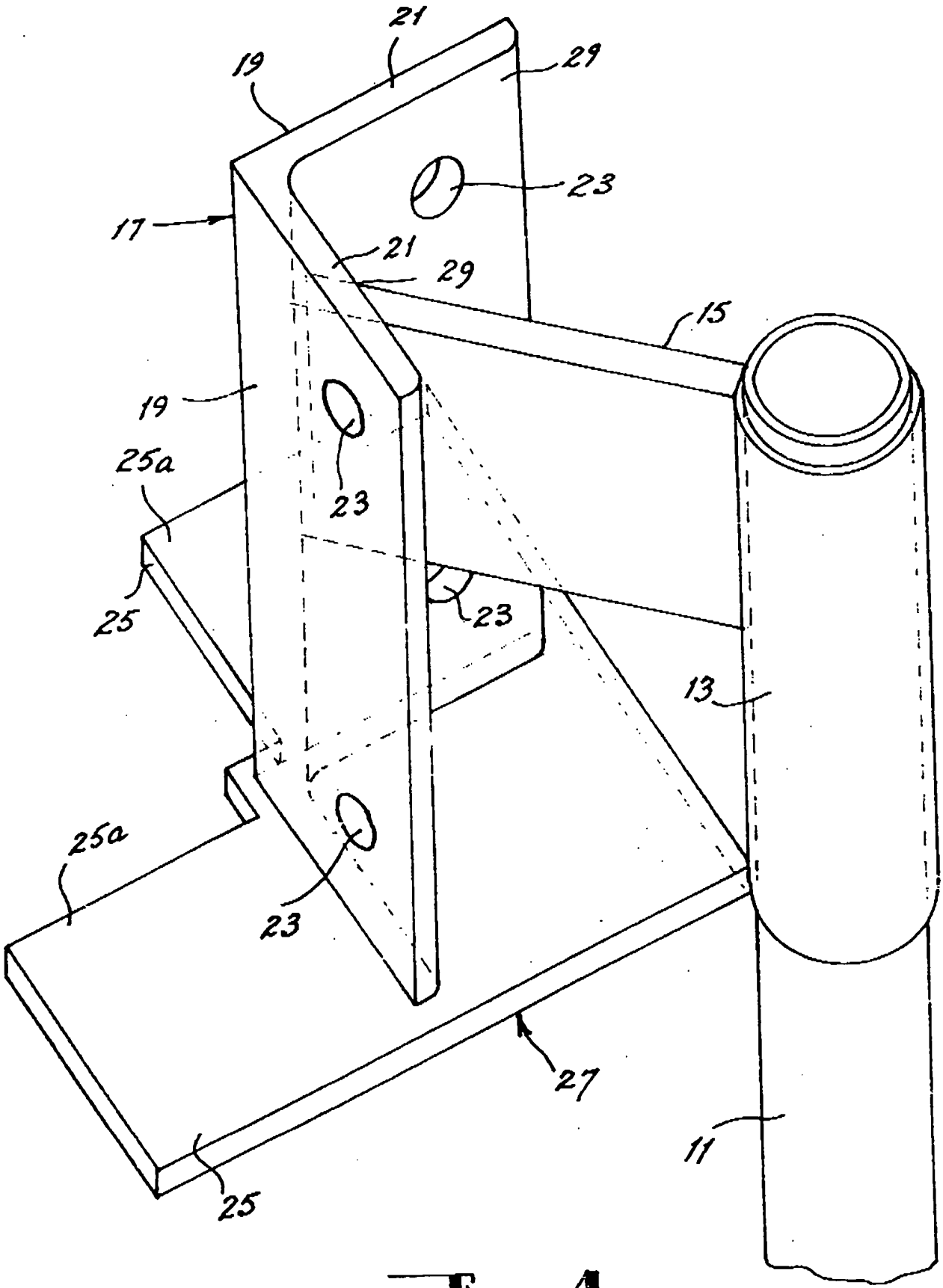

Fig 4

34916/84

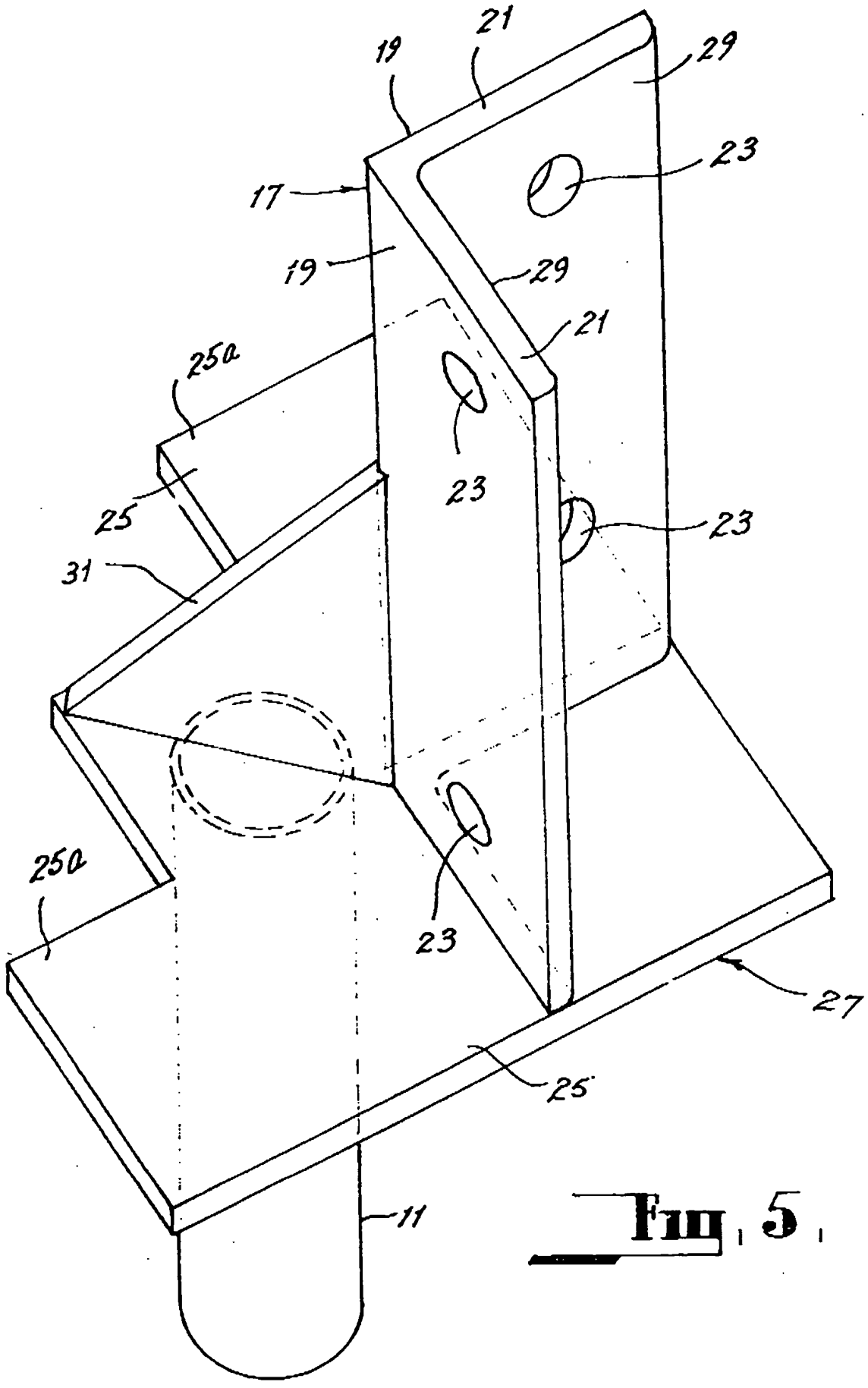

Fig. 5